



UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549

DIVISION OF  
CORPORATION FINANCE

Mail Stop 3030

May 7, 2010

Jon Faiz Kayyem, Ph.D.  
President and Chief Executive Officer  
GenMark Diagnostics, Inc.  
757 S. Raymond Avenue  
Pasadena, California 91105

**Re: GenMark Diagnostics, Inc.  
Registration Statement on Form S-1  
Amended on April 20, 2010  
File No. 333-165562**

Dear Dr. Kayyem:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

1. We note from your response to prior comments 19 and 39 that you will (or may need to) make changes to the filing in a subsequent amendment. Please ensure that the requested disclosures are provided in a future amendment prior to the planned effectiveness of your Form S-1 registration statement. Please note that we are deferring our review of those comments until the disclosures have been provided.

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Prospectus Summary, page 1

1. We reissue prior comment 5, as you continue to use technical terms or acronyms that are not defined at the time of first use. We note as one example your reference to EGFR therapy on page 5.

Market Opportunities and Limitations of Current Technologies, page 3

2. We note your response to prior comments 6 and 8.
  - Please provide us a complete copy of the L.E.K. market research report and the full report of the statistics provided by Kalorama Information 2009.
  - Please disclose that you paid L.E.K. for market research information that appears in your registration statement.
  - It is unclear how the supplemental information provided supports to the market opportunity data that appears on page 5. Please advise.
  - Please balance your disclosure on page 55 to clarify that your target market for molecular diagnostic testing of infectious diseases in the United States was estimated to be a fraction of the \$1.1 billion figure that you cite.
  - It appears that the supplemental material provided in response to the cystic fibrosis market disclosure on page 59 is applicable to the molecular clinical diagnostics market in general and not to the cystic fibrosis diagnostics market specifically. Please advise, or revise your disclosure accordingly.

We may have further comment once you have provided the additional information that you represented in your supplemental letter would be provided, as well as the information requested here.

Legislative or regulatory healthcare reforms may make it more difficult..., page 19

3. Please expand the second paragraph under this section to address the medical device excise tax disclosure you have added at the top of page 75.

Critical Accounting Policies and Significant Judgments and Estimates, page 44

Share-Based Compensation, page 44

4. Please refer to prior comment 22. We note your response and revised disclosure that the board of directors determined the fair value of the common stock to be the equivalent of the closing price of your common stock on the Alternative Investment Market of the London Stock Exchange. Please provide us a chronological listing of each common stock, common stock option and warrant issuance for the most recent fiscal year ended December 31, 2009 and subsequent interim period which details the closing price of your common stock on the Alternative Investment Market and the corresponding exercise or sales price of the instrument in both United States Dollars and Great Britain Pounds on a pre and post share exchange basis. Discuss any significant factors contributing to the difference between the closing price and exercise or sales price of the instrument.

Sales and Marketing, page 66

5. Given your disclosure on page 67 and the requirements of Regulation S-K Item 101(c)(vii), we reissue prior comment 30.

Base Salary, page 83

6. We reissue prior comment 33 in part. We note that your disclosure does not demonstrate how the compensation committee uses market survey data to determine executives' base salaries. For example, does the committee make upward or downward adjustments after analyzing the data?

Principal Stockholders, page 95

7. We note your response to prior comment 36 and may have further comment once the requested disclosure is provided.

Lock-Up Agreements, page 103

8. We note your response to prior comment 38 and may have further comment once the requested disclosure is provided.

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As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes all information required under the Securities Act of 1933 and that they have provided all information investors require for an informed investment decision. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event the company requests acceleration of the effective date of the pending registration statement, it should furnish a letter, at the time of such request, acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in connection with our review of your filing or in response to our comments on your filing.

We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement.

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We direct your attention to Rules 460 and 461 regarding requesting acceleration of a registration statement. Please allow adequate time after the filing of any amendment for further review before submitting a request for acceleration. Please provide this request at least two business days in advance of the requested effective date.

You may contact Kevin Kuhar at (202) 551-3662 or Jeffrey Jaramillo, Accounting Branch Chief, at (202) 551-3212 if you have questions regarding comments on the financial statements and related matters. Please contact Celia Soehner at (202) 551-3463 or me at (202) 551-3625 with any other questions.

Sincerely,

Mary Beth Breslin  
Senior Attorney

cc (via facsimile): Michael S. Kagnoff, Esq. — DLA Piper LLP